

wherein said lookup table includes a list of values, which are determined by combinations of a length $M(n)$ of a mark being currently written and at least one of a length $s(n-1)$ of a space precedent to the mark and a length $s(n+1)$ of a space subsequent to the mark, and which can be positive and negative.

8. (twice amended) A recording medium comprising:
a disk-shaped substrate;
at least one track being provided on the disk-shaped substrate;
a zone including said at least one track therein;
wherein said zone stores a lookup table having information about edge shifting of at least one of a leading and trailing edge of at least one recording pulse;
and

wherein said lookup table includes information about edge shifting of at least one of a leading and trailing edge of one recording pulse for recording a mark $3Tw$ long, where Tw is a time width.

REMARKS

By the above amendment, claims 7 and 8 which are objected to because of the informalities noted by the Examiner, have been amended in a manner similar to that suggested by the Examiner, utilizing the term "disk-shaped", such that the objection to claims 7 and 8 should now be overcome.

As to the rejection of claims 7, 9-16 and 19 under 35 U.S.C. 103(a) as being unpatentable over Fuji (U.S. Patent 6,310,846) in view of Lee (U.S. Patent 6,241,524), this rejection is traversed insofar as it is applicable to the present claims, and reconsideration and withdrawal of the rejection are respectfully requested.

Applicants note that the aforementioned statement of the rejection does not include claim 8, and at page 4 of the Office Action, the Examiner has indicated that

"claim 8 has limitations similar to those treated in the above rejection(s), and are met by the references as discussed above". Applicants submit that there is no proper statement of the ground of rejection of claim 8 in accordance with the requirements of the statute, rules and MPEP. Accordingly, applicants submit that claim 8 has not been rejected in a manner as required.

At the outset, as to the requirements to support a rejection under 35 U.S.C. 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge". The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and

could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

In setting forth the rejection, the Examiner contends that Fuji teaches a recording medium having elements and means very similar to that of the instant invention indicating that Fuji teaches a zone including at least one track (Fig. 8; a recording zone/area is an inherent feature of the recording medium 1) and that "the zone stores a lookup table 57 (Fig. 2; column 4, lines 28-33)". Applicants submit that contrary to the position set forth by the Examiner, Fuji does not disclose storing of a lookup table having information as recited in claims 7 and 8. Furthermore, the Examiner recognizes that "Fuji does not teach the following:

(a) as in claim 7, 9-16 and 19, the lookup table includes a list of values about the waveform data of a recording pulse."

The Examiner recognizing the aforementioned deficiency of Fuji cites Lee to overcome such deficiency. More particularly, the Examiner contends that Lee teaches a lookup table 2 which stores a list of a pulse information values such as pulse widths, length and intervals (Fig. 6: column 7, lines 54-64).

Furthermore, the Examiner contends that "a look-up table as a form of data stored in a recording medium such as Applicant's and Fuji's is considered as a non-functional descriptive material. And it is obvious to store any type of data such as Applicant's and Fuji's non-functional descriptive material on a disk." (emphasis added) Applicants submit that apparently, the Examiner has taken the position that the information stored can be ignored. Applicants submit that the Examiner's position that the features of the information stored is "non-functional" is in error, in that claim 7 recites the features of:

wherein said zone stores a lookup table having information about edge shifting of at least one of a leading and trailing edge of at least one recording pulse; and

wherein said lookup table includes a list of values, which are determined by combinations of a length M(n) of a mark being currently written and at least one of a length s(n-1) of a space precedent to the mark and a length s(n+1) of a space subsequent to the mark, and which can be positive and negative. (emphasis added); and

Claim 8 recites the feature of:

wherein said zone stores a lookup table having information about edge shifting of at least one of a leading and trailing edge of at least one recording pulse; and

wherein said lookup table includes information about edge shifting of at least one of a leading and trailing edge of one recording pulse for recording a mark 3Tw long, where Tw is a time width. (emphasis added)

Applicants submit that such features are not disclosed or taught in the cited art.

Applicants note that in accordance with the features of the lookup table having the information as recited, by combinations of the length of a mark and the length of the space precedent and subsequent to the mark, information of shifting amount (or compensating amount) is previously written into two lookup tables (used for the first recording pulse and the last recording pulse), to shift the first and last recording pulses of the plurality of recording pulses from a predetermined position of the plurality of recording pulses, as described at page 15, lines 17-26 of the specification. Thereby, a mark shape and a mark position can be compensated with very little displacement caused by the length of the adjacent marks and the mark of interest, and stable and reliable data can be read out from the medium with high recording density, as described at page 30, lines 12-18 of the specification of this application. Applicants submit that such features which the Examiner refers to as "non-functional descriptive matter" properly describes the information of the lookup table and cannot be ignored. See In re Swinehart and Sfiligoj, 169 USPQ 226 (CCPA 1971).

Turning to Fuji, applicants note that this patent discloses recording a reproducing control pattern composed of the long mark 67 and a short mark 68 on a pattern recording region 57 as illustrated in Fig. 2 of this patent, as described at col. 4, lines 29-33. Fig. 2 of Fuji illustrates that a large amplitude reproduced signal 70 can be obtained in reproducing a long mark longer than an aperture 69, and that a small amplitude reproduced signal 71 can be obtained in reproducing a short mark 68 shorter than the aperture, as described at col. 4, lines 39-44. A mark in the pattern recording region 57 is subject to a test recording for a purpose of controlling a reproduction light amount by an optimum amplitude ratio of the long and short marks to minimize the error rate, as described at col. 4, lines 46-54 and 63-65 of Fuji. Thus, applicants submit that Fuji does not store information about edge shifting of at least one of a leading and trailing edge of at least one recording pulse as recited in claims 7 and 8, nor that the lookup table includes a list of values, which are determined by combinations of a length of a mark being currently written and at least one of a length of a space precedent and subsequent to the mark, as recited in claim 7, or that the lookup table includes information about edge shifting of at least one of a leading and trailing edge of one recording pulse for recording a mark 3Tw long, where Tw is a time width. Thus, applicants submit that as recognized by the Examiner, Fuji does not disclose such features in the sense of 35 U.S.C. 103, and claims 7 and 8 and the dependent claims patentably distinguish thereover, noting that such features cannot be ignored.

With regard to the patent to Lee, this patent discloses storing of a lookup table indicating a relationship between a channel bit and recording data by producing recording pulse data, as illustrated in Figs. 1 and 3 of the drawings of this patent, synchronized with the channel bit produced by an encoder as described at col. 7, lines 53-58 of this patent. The recording pulse data includes the number of pulses, pulse width and pulse interval as described in col. 7, lines 58-60, in connection with Figs. 1 and 3. However, the number of pulses, pulse width and pulse interval are

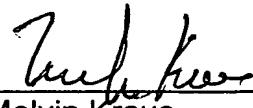
determined by a mark length to be recorded, as described at col. 4, lines 52-61 of this patent. Therefore, the lookup table of Lee does not have information of carrying out the edge shifting in accordance with a list of values which are determined by combinations of a length of a mark being currently written and at least one of a length of the space precedent and subsequent to the mark, as recited in claim 7 and the dependent claims or claim 8, information about edge shifting of at least one of a leading and trailing edge of one recording pulse for recording a mark 3Tw long, where Tw is a time width. Thus, applicants submit that the proposed combination fails to provide the claimed features as recited in claims 7 and 8 and the dependent claims of this application, which features cannot be ignored. Additionally, applicants note that the proposed combination represents a hindsight reconstruction attempt utilizing the principle of "obvious to try" in that Lee issued in 1993 and was available to Fuji, several years prior to the filing of the Fuji patent. It is apparent that the combination of references thus represents a hindsight reconstruction attempt of the present invention utilizing the principle of "obvious to try" which is not the standard of 35 U.S.C. 103. See In re Fine, supra. In any event, as noted above, the combination fails to provide the claimed features in the sense of 35 U.S.C. 103 as recited in independent claims 7 and 8 and the dependent claims of this application. As such, applicants submit that all claims present in this application patentably distinguish over this proposed combination of references in the sense of 35 U.S.C. 103, and should be considered allowable thereover.

With respect to dependent claims 9-16 and 19, applicants submit that such dependent claims recite additional features not disclosed or taught in the cited art, and when considered in conjunction with the parent claims, further patentably distinguish over the cited art in the sense of 35 U.S.C. 103, and such dependent claims should also be considered allowable at this time.

In view of the above amendments and remarks, applicants submit that all claims present in this application should now be in condition for allowance, and issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (500.37445CX1) and please credit any excess fees to such deposit account.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 7 and 8 as follows:

7. (twice amended) A recording medium comprising:
a disk-like shaped substrate;
at least one track being provided on the disk-like shaped substrate;
a zone including said at least one track therein;
wherein said zone stores a lookup table having information about edge shifting of at least one of a leading and trailing edge of at least one recording pulse;
and

wherein said lookup table includes a list of values, which are determined by combinations of a length $M(n)$ of a mark being currently written and at least one of a length $s(n-1)$ of a space precedent to the mark and a length $s(n+1)$ of a space subsequent to the mark, and which can be positive and negative.

8. (twice amended) A recording medium comprising:
a disk-like shaped substrate;
at least one track being provided on the disk-like shaped substrate;
a zone including said at least one track therein;
wherein said zone stores a lookup table having information about edge shifting of at least one of a leading and trailing edge of at least one recording pulse;
and

wherein said lookup table includes information about edge shifting of at least one of a leading and trailing edge of one recording pulse for recording a mark $3Tw$ long, where Tw is a time width.